

VI.—*Descriptions of new Species of Fossorial Hymenoptera in the Collection of the British Museum.* By FREDERICK SMITH, Assistant in the Zoological Department, British Museum.

[Continued from vol. xi. p. 451.]

Genus NOTOCYPHUS, Smith.

Notocyphus maculifrons.

Female. Length $7\frac{1}{2}$ lines. Head, thorax, and base of the abdomen black, the following segments ferruginous; wings fusco-hyaline, with the apex of the anterior pair dark fuscous. Head as wide as the thorax; a narrow abbreviated line at the inner orbits of the eyes, above the insertion of the antennæ; a small yellow angulated spot on each side of the clypeus; an obscure fulvous line on the seven apical joints of the antennæ beneath; the palpi rufo-testaceous. Thorax: the prothorax shorter, and the metathorax a little longer than the mesothorax; the latter truncate; the claws of all the tarsi and the spurs of the anterior tibiæ ferruginous. Abdomen: the posterior margin only of the first segment ferruginous; the two following segments have on each side a pale ferruginous curved line, those on the third segment uniting at the base of the segment; the two following segments have, at their base, a dark fuscous transverse spot; beneath, each segment has a large black macula on each side, which occupies the greater part of the segment.

Hab. Para.

This species resembles the type of the genus, *N. scvissimus*, also found at Para; but it has a broader head, its prothorax is proportionally shorter, as is also the metathorax; it differs also in having ferruginous claws and in the coloration of the wings, and in having the clypeus maculated.

Genus PEPSIS, Fabr.

Pepsis eximius.

Male. Length $7\frac{1}{2}$ lines. Brilliant green, with golden tints. Head: the sides of the clypeus and of the face covered with bright golden pubescence, the cheeks are also adorned with the same; antennæ orange-yellow, with the scape and first joint of the flagellum black. The sides of the thorax and the coxæ beneath covered with bright golden pile; the sides of the scutellum, the postscutellum, and entire margins of the metathorax above with golden pile; legs black, with tints of bright green in certain lights; wings fulvo-hyaline, with a

dark fuscous cloud at their apex, which covers the marginal and third submarginal cells, and extends to the apex of the wings. Abdomen subpetiolate, and of a vivid golden green.

Hab. Santarem.

Pepsis tinctipennis.

Female. Length $15\frac{1}{2}$ lines. Black, with blue and green shades in different lights; wings dark brown, glossy, but not prismatic, with the apex of the anterior wings yellow from the base of the third submarginal cell. Head: the scape of the antennæ of a blue tint; the seven following joints opaque black; the five apical joints orange-yellow. Thorax: the disk has a bright green tint in certain lights; the metathorax obscurely tinted with shades of blue or green, and irregularly, strongly, transversely striated; the legs dark blue; the tibiæ and tarsi thickly set with short spines. Abdomen shining, and reflecting shades of purple, blue, and green.

Hab. Para.

Pepsis fuscipennis.

Female. Length 9– $11\frac{1}{2}$ lines. Head and thorax obscurely blue; abdomen black, exhibiting a blue lustre in certain lights. Head: antennæ pale yellowish white, with the scape and three, or sometimes four, of the basal joints black; the third and the fourth joints also occasionally more or less pale at the apex. Thorax: the metathorax more or less covered with pale golden pile, and transversely striated; wings fuscous, not darkly so, with the apex of the anterior pair milky white; legs obscure blue; the tibiæ and tarsi thickly set with short spines. Abdomen elliptical; the second and three following segments with two very obscure, divergent ferruginous lines in the middle.

Hab. Ega; Para.

This may possibly be the *P. elongata* of St. Fargeau in very fine condition, having golden pile on the metathorax; it has the wings paler, and it also differs in having the tips of the anterior wings pale; still I have a suspicion of its being a local variety. *P. elongata* is from Surinam.

Pepsis optimatis.

Female. Length 12 lines. Head and thorax clothed with golden pubescence; abdomen black, with a beautiful changeable opaline lustre. Head: the antennæ orange-red; the scape black, and with a golden pile. Thorax bright golden; wings dark rufo-fuscous, with a pale spot in the second dis-

coidal cell; legs black; the tibiæ and tarsi very strongly spinose; the coxæ with golden pile. Abdomen black, with a sericeous pile that changes in tint in different lights, to green, gold, blue, or opaline lustre.

Hab. Para.

Pepsis purpureus.

Female. Length 7 lines. Purple, with blue and green tints in certain lights. The four apical joints of the antennæ, and the apex of the fifth, bright orange-yellow. The posterior margin of the prothorax incrassate; the metathorax transversely and irregularly striated, and having a longitudinal central impressed line, extending to the apex; the wings dark fuscous, with a minute hyaline spot at the base of the second discoidal cell; the intermediate and posterior tibiæ and tarsi strongly spinose. Abdomen smooth and shining, partaking of splendid tints of purple, blue, and green in different lights; the apical segment covered with erect black hairs.

Hab. Tapajos; Para.

A specimen of what I can only regard as a variety of this species, from Para, differs in having an additional pale joint at the apex of the antennæ, and also in having the impressed line on the metathorax very faintly traced.

Genus CEROPALES, Latr.

Ceropales crassicornis.

Male. Length 6 lines. Black, and variegated with spots and fasciæ of a pale ochraceous colour, tinged with ferruginous. Head rather wider than the thorax, the antennæ fulvous beneath; the clypeus and inner orbits of the eyes as high as the anterior stemma, and a narrow line behind the eyes ochraceous; the labrum sulphur-yellow. Thorax: the posterior margin of the prothorax, the tegulæ, and a line over them, an oblong spot on the mesothorax, the scutellum, the sides of the metathorax, and a line in its centre, not reaching its apex, ochraceous; two ovate black spots at the base of the scutellum; all the coxæ ochraceous, and more or less striped with black; wings flavo-hyaline, with a dark fuscous cloud at the apex of the anterior pair, which extends nearly to the base of the marginal cell; the posterior pair faintly clouded at their apex; the nervures ferruginous, the costal ones black. Abdomen: the basal margin of the first, second, and third segments with an ochraceous fascia; beneath, the three basal segments have their lateral margins broadly ochraceous.

Hab. Para.

Ceropales lugubris.

Male. Length $3\frac{1}{2}$ lines. Black, thinly covered with hoary pile; wings subhyaline and iridescent, faintly clouded at their apex, with their nervures fuscous. Head: the clypeus covered with silvery pubescence, and, as well as the palpi and a minute spot on the cheeks, close to the base of the mandibles, white; a yellowish-white spot on the scape of the antennæ. Thorax: the posterior margin of the prothorax, a minute spot on the scutellum, another on the mesothorax between the wings, white; a pale spot at the apex of the anterior tibiæ; the anterior tarsi rufo-testaceous; the posterior legs nearly twice as long as the body. The apical segment of the abdomen white.

Hab. Santarem.

Ceropales pedestris.

Male. Length 3 lines. Black, the wings hyaline and beautifully iridescent; posterior legs more than twice the length of the body, and the abdomen maculated with white. Head rather wider than the thorax; the clypeus, labrum, palpi, scape in front, first joint of the flagellum in front, and the inner orbits of the eyes, as high as their sinus, white. Thorax: the postscutellum, coxæ beneath, anterior trochanters beneath, and the tibiæ and tarsi entirely white; the tibiæ have a narrow black line above; the nervures of the wings black; the scutellum elevated into a pointed tubercle; the metathorax with a changeable silvery pile. Abdomen: each segment with a lateral oblong macula; the fifth with two central ovate spots, the sixth with a large quadrate one, and the seventh segment entirely white.

Hab. Para.

Ceropales irregularis.

Male. Length $4\frac{1}{2}$ lines. Head and thorax black and shining; abdomen and legs red; the posterior legs twice the length of the body. Head: the labrum, clypeus, face, as high as the insertion of the antennæ, a line at the inner orbits of the eyes, which widens and terminates in their sinus, and a narrow line behind the eyes white; the scape and first joint of the antennæ white beneath. Thorax: the posterior margin of the prothorax, the postscutellum, and anterior coxæ beneath white; the metathorax with a deep central longitudinal incision, and with its posterior lateral angles white and covered with silvery pubescence; wings hyaline, their nervures black, with the apical margin of the anterior pair slightly fuscous; the posterior tarsi black.

Hab. Para.

Genus APORUS, Spin.

Aporus quadrimaculatus.

Female. Length $5\frac{2}{3}$ lines. Black, with a large ovate white macula on each side of the second and third segments. Head: the tips of the mandibles, the scape beneath, as well as the four basal joints of the flagellum of the antennæ beneath, fulvous. Thorax: the posterior margin of the scutellum, the postscutellum, and the metathorax covered with a glittering silvery pile that changes in different lights to shades of greater or less brilliancy; the coxæ and femora also covered with glittering pile; the calcaria at the apex of the intermediate and posterior tibiæ white; the anterior wings dark fuscous, with a hyaline fascia crossing them at the apex of the first submarginal cell; the externo-median cell is also hyaline, and the extreme apex of the wings pale; the posterior wings are hyaline and iridescent, with a faint cloud at their apex. The apical segment of the abdomen white, or yellowish white.

Hab. Para; Santarem.

Aporus canescens.

Female. Length $3\frac{1}{4}$ -5 lines. Black, and covered with hoary pile, most thinly so on the vertex, disk of the thorax, and base of the abdomen. Tips of the mandibles ferruginous; wings dark fuscous, and having a coppery refulgence; the hoary pile is most dense at the base of the segments of the abdomen.

Hab. Para; Ega.

The male only differs in being smaller and less pilose; the wings are dark fuscous; the metathorax concavely truncate.

Aporus minutus.

Male. Length 2 lines. Black, and thinly covered with a fine hoary pile; smooth and shining; the wings fusco-hyaline; the spines and calcaria on the intermediate and posterior tibiæ and tarsi elongate; the apex of the metathorax rounded; the abdomen narrow, and pointed at its apex.

Hab. Para.

This insect is very like the male of *A. canescens*, but, I think, is a distinct species; the metathorax is not distinctly truncated.

Family Sphegidae.

Genus TRIGONOPSIS, Perty.

Trigonopsis cyclocephalus.

Male. Length 8 lines. Head and thorax black; abdomen ferruginous, with the petiole black; anterior wings with two light-brown fasciæ. Head slightly narrowed behind, smooth, shining, and impunctate; the sides of the face and the clypeus covered with golden pubescence; the latter produced into two teeth at its anterior margin, which, as well as the mandibles, are ferruginous; the latter black at their tips; the scape of the antennæ pale ferruginous, and the two following joints of the flagellum obscurely ferruginous beneath; the prothorax smooth, shining, and narrowed anteriorly into a short neck; its posterior margin fringed with silvery hairs, and in the middle it is elevated into a slight tubercle; the anterior and intermediate tibiæ and tarsi ferruginous; the anterior femora, and the other femora more or less, ferruginous at their apex.

Hab. Ega.

This species is very distinct from all those that have a similar coloration—namely, the typical one (*T. rufiventris*), *T. affinis*, and *T. intermedius*, described by Saussure in 'Reise der Novara.' It is distinguished from the type by its shorter and rounder head, by the pale tibiæ and tarsi, its shorter neck and metathorax, the latter being covered with transverse striæ. From the male of *T. affinis* it is at once distinguished by the ferruginous scape of the antennæ, and by its having the teeth and anterior margin of the clypeus also ferruginous; it has the second submarginal cell square and larger, and its legs are differently coloured. From *T. intermedius* it will probably prove to differ; but the male of that species is not known.

Trigonopsis plesiosaurus.

Female. Length 7 lines. Elongate and attenuated; head and thorax shining black; abdomen red. Head narrowed behind, the sides nearly parallel, or only slightly widest anteriorly; the clypeus and face with a golden pile; the anterior margin of the clypeus with four teeth, the outer pair stoutest and longest; the mandibles arcuate, and, as well as the scape of the antennæ in front, ferruginous, as are also its extreme base and apex. Thorax smooth, shining, and forming a long neck with a deep central abbreviated channel at its base; the mesothorax with scattered large deep punctures;

the metathorax strongly punctured, and with a triangular patch of silvery pubescence at its base; the wings with similar fasciæ as in *T. cyclocephalus*; the tegulæ obscurely testaceous; the anterior and intermediate femora, tibiæ, and tarsi ferruginous; the intermediate femora more or less fuscous above; the posterior pair ferruginous at their extreme base and apex; the petiole and swollen part of the segment, except its apical margin, black.

This is perfectly distinct from all the species with which I am acquainted; its long attenuated form alone would distinguish it; but its punctured metathorax, without striation, at once separates it.

Hab. Ega.

Genus AMPULEX, Jurine.

Ampulex trigonopsis.

Female. Length $7\frac{3}{4}$ lines. Black: head and thorax with an olive-green pile; wings maculated. Head: clypeus covered with silvery pile, sharply carinated, and produced in front into an acute tooth; covered with somewhat oblong punctures; those on the pro- and mesothorax are similar; the metathorax with a central and on each side four longitudinal carinæ, three of which converge inwards; between the carinæ it is transversely striated; the posterior lateral angles dentate; wings hyaline; the nervures black; the anterior margin of the superior wings fuscous; a fuscous cloud covers the marginal, two submarginal cells, and the apex of the third discoidal cell; the legs have an olive silky pile. Abdomen very smooth and shining, with a pale silvery pile over the apical margin of the second segment, and also the rest of the abdomen; the apical segment rufo-testaceous.

Hab. Ega.

Family Larridæ.

Genus LARRADA, Smith.

Larrada fasciata.

Female. Length $4\frac{1}{2}$ lines. Black; pilose. The face and clypeus silvery, only observable in certain lights; the tips of the mandibles ferruginous. Thorax: the mesothorax with pale golden pile, on the rest of the thorax it is silvery, and on the metathorax brightest; that on its truncation very dense and bright; wings hyaline; the anterior pair with a pale fuscous fascia crossing them from the stigma, its width being

equal to the length of the third discoidal cell; the nervures fuscous; the stigma and costal veins blackish; the tegulæ obscurely testaceous. The abdomen narrowed at its base and subpetiolate; the three basal segments with silver fasciæ on their apical margins; the three apical segments with a covering of pale golden pile, only observable in certain lights.

Hab. St. Paulo (Amazons).

Larrada facilis.

Female. Length $5\frac{1}{4}$ lines. Black, and brilliantly adorned with bright silvery pile. The face and clypeus silvery. Thorax slightly shining; the metathorax opaque, and more or less covered with bright silvery pile; wings subhyaline, the nervures fuscous; costa and stigma black; the outer margin of the tegulæ testaceous. The apical margins of the three basal segments of the abdomen with bright silvery fasciæ; the two apical segments entirely silvery.

Hab. Ega.

Larrada tenebrosa.

Female. Length $4\frac{1}{2}$ lines. Shining black; the head and mesothorax highly polished and impunctate. The clypeus with silvery pile. Thorax: the sides, and also beneath, thinly covered with a short changeable hoary pubescence; the metathorax finely transversely striated, and having a central longitudinal depression; the truncation with a central impressed line, and with the lateral margins roughened; wings fuscous, with their apex pale. Abdomen smooth, shining, impunctate, and destitute of marginal fasciæ.

Hab. Ega.

Larrada pruinosa.

Female. Length $5\frac{1}{4}$ lines. Black, and covered with a thin hoary pile, most densely so beneath; on the sides of the thorax and legs, in certain lights having a silvery lustre. The face and clypeus with bright silvery pile, also the metathorax on the sides and posteriorly; the wings hyaline, faintly tinted with yellow; the nervures pale testaceous, with the costa and stigma black. Abdomen with silvery fasciæ on the posterior margins of the three basal segments; the apical segment with a changeable short fuscous pubescence.

Hab. Ega.

Larrada athiops.

Female. Length $8\frac{2}{3}$ lines. Black; head and abdomen

shining; thorax opaque. Head: mandibles ferruginous, with their base black; the anterior margin of the clypeus rounded; the head behind covered with silvery pile, a patch of the same on each side of the clypeus. The thorax covered with a changeable silvery pile, most sparingly so on the mesothorax; the legs pilose; the scutellum shining; a patch of bright silvery hair on the metathorax close to the insertion of the posterior coxæ; wings dark brown, and having a coppery and violet iridescence in certain lights; the base of the posterior pair subhyaline. Abdomen smooth, shining, and impunctate.

Hab. Ega; St. Paulo.

Larrada limpidipennis.

Female. Length $5\frac{1}{4}$ lines. Black, with pale flavo-hyaline wings; their tegulæ and all the nervures towards the base of the wings bright yellow, but towards their apex becoming slightly darker; a faint cloud at the apex of the superior pair. Head: the clypeus densely covered with bright silvery pile, the cheeks also pilose; the mandibles, and the antennæ beneath, ferruginous. The metathorax, the coxæ, and femora beneath, covered with bright, changeable, silvery pile; the apical joints of the tarsi ferruginous. The apical margins of the three basal segments of the abdomen with fasciæ of bright silvery pile.

Hab. Para.

Genus TACHYTES, Panz.

Tachytes iridipennis.

Female. Length $3-3\frac{3}{4}$ lines. Black; wings hyaline, and exhibiting beautiful iridescent colours in different lights. Head: the lower part of the face and the clypeus covered with bright silvery pubescence. The mesothorax shining and finely punctured; the metathorax above with longitudinal, fine, divergent striæ; the wings with the neuration black and the tegulæ pale testaceous; the apical joints of the tarsi ferruginous; the sides of the thorax beneath, and also the legs, with a thin, changeable, cinereous pilosity. Abdomen conical, very thinly pilose, shining, and with changeable silvery fasciæ on the apical margins of the segments; beneath smooth and shining.

Hab. Ega.

Tachytes fervens.

Male. Length $4\frac{1}{2}$ lines. Black; the legs ferruginous; adorned with golden pubescence. Head: the face and clypeus covered with bright golden pubescence; the mandibles fer-

ruginous. Thorax: the pubescence thin on the disk of the mesothorax, but dense and bright at its margins, and also on the prothorax and postscutellum; the metathorax covered with a thin, erect, pale pubescence; wings flavo-hyaline, their nervures ferruginous; the tegulæ pale testaceous; legs ferruginous, with the coxæ and base of the femora above blackish. Abdomen: the posterior margins of the segments broadly ferruginous, and covered with a thin golden pile; beneath ferruginous, with the base of the first and second segments more or less black.

Hab. Ega.

Tachytes simulans.

Female. Length $5\frac{1}{2}$ lines. Black; the abdomen with pale golden fasciæ. The face and clypeus covered with silvery pubescence; the mandibles ferruginous. Thorax: the sides and beneath, covered thinly with a changeable hoary pile; the prothorax, margins of the mesothorax, and of the scutellum with very pale golden pile; the tibiæ and tarsi have a pale golden pile, their spines ferruginous; wings flavo-hyaline, with the nervures pale ferruginous; the tegulæ pale testaceous. Abdomen thinly covered with a fine, changeable, golden pile; the posterior margins of the segments with fasciæ of bright pale golden pubescence; the apical segment entirely golden.

Hab. Ega.

Tachytes frontalis.

Female. Length 7 lines. Black; the face densely clothed with bright golden pubescence, that on the cheeks pale golden, inclining to silver; the mandibles ferruginous, with some silvery pubescence at their base. Thorax semiopaque, and on the sides and beneath thinly covered with cinereous pubescence; the margins of the mesothorax and postscutellum silvery; the legs pilose, more or less silvery in certain lights; the spines on the tibiæ and tarsi ferruginous; wings hyaline, the nervures pale ferruginous, the costal ones fuscous; a narrow fuscous stain runs along the anterior margins of the front wings from the base of the first submarginal cell to the apex of the wing; the sides of the metathorax with long hoary pubescence. Abdomen: a bright silvery fascia on the posterior margins of the first and three following segments; the apical segment covered with pale golden pubescence.

Hab. St. Paulo (Brazil).

Tachytes auro-vestitus.

Female. Length 9 lines. Black; the head and thorax

densely clothed with bright golden pubescence. The mandibles ferruginous at their tips; their base covered with golden pubescence; the palpi pale ferruginous. The wings subhyaline, the nervures pale ferruginous, the costal nervures dark fuscous; a narrow fuscous stain runs along the anterior margin of the front pair, from the base of the first submarginal cell to the apex of the wings; the tegulæ rufo-testaceous; the tibiæ with golden pubescence outside; the tarsi are pale golden, inclining to silver; the spines on the tibiæ and tarsi pale ferruginous. Abdomen: the basal segment with a thin, pale golden pile; the apical margins of the four basal segments with silvery fasciæ.

Hab. Ega.

[To be continued.]

VII.—On *Nephropsis Stewarti*, a new Genus and Species of *Macrurous* Crustaceans, dredged in deep water off the Eastern Coast of the Andaman Islands. By JAMES WOOD-MASON*.

IN April of last year I was deputed by the Trustees of the Indian Museum, with the sanction of the Government of India, to proceed to the Andaman Islands for the purpose of making a collection illustrative of the marine fauna of that part of the sea of Bengal in which those islands are situated. I reached Port Blair about the 6th of April, and immediately put myself in communication with the Chief Commissioner, who at once placed at my disposal a well-manned boat and a small steam-launch, with which I dredged for nearly two months, with much success, from low-water line down to near 50 fathoms. Towards the end of my stay, General Stewart, knowing my intense desire to try my fortune in deeper water, placed at my disposal for one day the S.S. 'Undaunted,' which had been recently armed and put into commission for service as a guard-ship. The time allowed was short, but sufficiently long to enable me to bring away samples of the life supported by the sea-bed at and beyond the 100 fathoms' line, and to ascertain that the sea-bed was uniformly covered with a thick deposit of fine olive-coloured mud, derived from the waste of the coral-reefs and of the sandstone and serpentine rocks of the islands †.

* From the Journal of the Asiatic Society of Bengal, vol. xlii. part 2, 1873. A plate accompanies the original.

† The following rough analysis by Mr. Tween, the chemist of the Geological Survey of India, will show the proportion of insoluble matter:—

Soluble in H Cl, mostly Ca O CO ₂	42·8
Insoluble clay and sand	57·2